

Appln. No. 10/007,468
Amendment dated September 30, 2005
Reply to Office Action of June 30, 2005

REMARKS/ARGUMENTS

Reconsideration of the present application, as amended, is respectfully requested.

The June 30, 2005 Office Action and the Examiner's comments have been carefully considered. In response, claims are cancelled and amended, and remarks are set forth below in a sincere effort to place the present application in form for allowance. The amendments are supported by the application as originally filed. Therefore, no new matter is added.

PRIOR ART REJECTIONS

In the Office Action claims 1-9 and 11-18 are rejected under 35 USC 103 as being unpatentable over USP 5,510,807 (Lee et al.) in view of USP 5,825,343 (Moon). Claims 10 and 19 are rejected under 35 USC 103 as being unpatentable over Lee et al. in view of Moon, and further in view of USP 6,825,823 (Taira et al.).

In response, claims 4 and 13 are cancelled and claims 1 and 12 are amended to include limitations from claims 4 and 13 respectively in order to more clearly define the present claimed invention over the cited references.

The present claimed invention as defined by amended claim 1 is directed to a liquid crystal display panel having a plurality of signal lines, a plurality of scanning lines, and a plurality

Appln. No. 10/007,468
Amendment dated September 30, 2005
Reply to Office Action of June 30, 2005

of display pixels arrayed in a matrix and provided respectively near cross-points between the signal lines and the scanning lines through switching elements, and a driver which supplies the plurality of signal lines with a display signal in a field period, and which supplies the plurality of scanning lines with a scanning signal, to apply the display signal to the plurality of display pixels. The driver includes means which supplies an initialization signal including a single pulse voltage to the signal line and supplies a first gate pulse as the scanning signal to the display pixels. After completion of the application of the initialization signal voltage to the signal line and after a predetermined hold time, the driver supplies the display signal to the signal lines and supplies a second gate pulse as the scanning signal to the scanning lines, thereby applying the display signal to the display pixel, at least one signal application period set within the field period, and the hold time is set to a time equal to or greater than a voltage-write response time of the display pixels.

The present claimed invention as defined by amended claim 12 is directed to a drive control method for a liquid crystal display device having a plurality of signal lines, a plurality of scanning lines, and a plurality of display pixels arrayed in a matrix and provided respectively near cross-points between the

Appln. No. 10/007,468
Amendment dated September 30, 2005
Reply to Office Action of June 30, 2005

signal lines and the scanning lines through switching elements, and which supplies the plurality of signal lines with a display signal in a field period and supplies scanning signals to the plurality of scanning lines, to apply the display signal to the plurality of display pixels. The method includes providing at least one signal application period in the field period, applying an initialization signal including a single pulse to the display pixel, by supplying the initialization signal voltage to the signal line and supplying a first gate pulse as the scanning signal to the scanning lines, and applying the display signal to the display pixels by supplying the display signal to the signal line and supplying a second gate pulse as the scanning signal to the scanning line after a predetermined voltage hold time has passed after completion of the supplying of the initialization signal voltage to the display pixels, wherein the hold time is set to a time equal to or longer than a voltage-write response time of the display pixels.

That is, the liquid crystal display device and the drive control method for a liquid crystal display device defined by amended claims 1 and 12 includes a structure and/or step to supply an initialization signal voltage to the signal line and a first gate pulse to the scanning lines. After completion of the application of the initialization signal voltage to the display

Appln. No. 10/007,468
Amendment dated September 30, 2005
Reply to Office Action of June 30, 2005

pixels and after a predetermined hold time (which is set to a time equal to or longer than a voltage-write response time of the display pixels) has passed, supplying the display signal to the signal lines and a second gate pulse to the scanning lines, thereby applying the display signal to the display pixel, one signal application period set within the field period. The present claimed inventions as defined by claims 1 and 12 have an advantage in that voltage change due to a field-through voltage in display pixels is constantly cancelled by a common electrode voltage V_{com} so that excellent display quality is attained.

Lee et al. disclose an LCD drive in which video data is continuously applied after a precharge pulse is applied to a data line during a period when scanning lines are selected.

Moon discloses a structure in which a gate pulse of a 1H period is applied to one gate line twice at a 1H interval.

That is, as Lee et al. continuously applies a precharge pulse and video data, it is different from the structure of the present claimed invention in which a hold time is provided between the application of the initialization signal voltage and the application of the display signal.

Even if Lee et al. is combined with Moon, it is impossible to make the continuous precharge pulse and video data of Lee et al. correspond to the two gate pulses separated by a 1H interval

Appln. No. 10/007,468
Amendment dated September 30, 2005
Reply to Office Action of June 30, 2005

of Moon. Thus, Lee et al. and Moon do not suggest the structure and steps of the present claimed invention of providing a hold time between the application of the initialization signal voltage and the application of the display signal.

Taira et al. do not close the gap between the present claimed invention as defined by amended claims 1 and 12 and Lee et al. taken in combination with Moon. Therefore, claims 1 and 12 are patentable over all of the references of record under 35 USC 102 as well as 35 USC 103.

Claims 2, 3, 5-11 and 14-19 are either directly or indirectly dependent on claims 1 and 12 and are patentable over the cited references in view of their dependence on claims 1 or 12 and because the references do not disclose, teach or suggest each of the limitations set forth in the dependent claims.

* * * * *

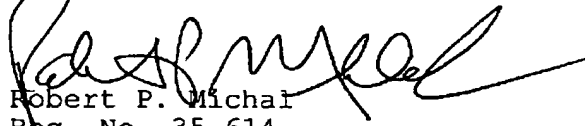
Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner disagrees with any of the foregoing, the Examiner is respectfully requested to point out where there is support for a contrary view.

Appln. No. 10/007,468
Amendment dated September 30, 2005
Reply to Office Action of June 30, 2005

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,



Robert P. Michael
Reg. No. 35,614

Frishauf, Holtz, Goodman & Chick, P.C.
220 Fifth Avenue
New York, New York 10001-7708
Tel. (212) 319-4900
Fax (212) 319-5101
RPM/ms